



# Massachusetts Department of Environmental Protection

## Addressing Perchlorate and other Emerging Contaminants in Massachusetts

### Overview

In July 2006, Massachusetts became the first state in the nation to promulgate drinking water and waste site cleanup standards for perchlorate, an emerging contaminant that was previously unregulated by any state or the federal government. The Massachusetts Department of Environmental Protection (MassDEP) fully engaged stakeholders in this groundbreaking effort and collaborated with them to develop the new standard of 2 parts per billion (ppb). MassDEP's successful process for addressing perchlorate provided a model for how the agency will address other emerging contaminants that may not be adequately regulated

### Establishing a Perchlorate Drinking Water Standard

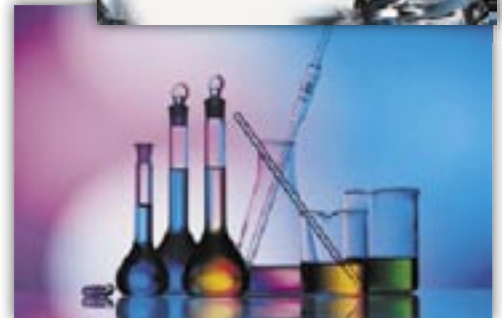
Perchlorate is a chemical found in blasting agents, fireworks, military munitions and other manufacturing processes. Perchlorate interferes with thyroid function and, consequently, can impair human development and metabolism. Perchlorate contamination was initially thought to be a concern primarily in the vicinity of current or former military operations. However, after statewide testing of public water supplies, perchlorate was detected in more than 10 systems, many of which appeared to be impacted by non-military sources of the contaminant. After intensive study and stakeholder involvement, MassDEP determined that standards were needed. MassDEP's goal was to protect public health, especially pregnant women and children, from a compound for which no state or federal drinking water standard existed. The keys to MassDEP's success were: (1) A rigorous scientific evaluation of the risks posed by perchlorate, (2) A comprehensive and innovative collaboration with major stakeholders, and (3) An effective outreach program to help manage the risk.

### Scientific Evaluation

MassDEP met with its scientific advisory committee, scientists from DOD (Army, Navy, and Air Force), and members of the National Academy of Science's Perchlorate Committee to evaluate the health risks posed by perchlorate, and develop appropriate solutions. Because MassDEP's assessment emphasized protecting infants and addressing concerns about breast milk exposures, MassDEP's work led to a lower reference dose than doses established by other groups.

### Stakeholder Collaboration

MassDEP, working with both the Massachusetts and New England Water Works Associations, held forums across the state to inform water suppliers about the sources of perchlorate, the health effects of perchlorate on sensitive subgroups, and the state's process for setting drinking water standards.



## Outreach Programs

MassDEP found perchlorate in water supplies close to blasting operations and communities with annual fireworks displays. Consequently, agency personnel met with local quarrying companies, the Institute of Makers of Explosives and the International Society of Explosives Engineers to learn more about their products and blasting practices. As a result of this and other research, MassDEP published guidance for blasting and firework contractors on practices to prevent contamination, and worked with industry and municipal partners to widely distribute this information.

## Establishing an Emerging Contaminant Strategy Process

Inspired in part by MassDEP's experience setting new standards for perchlorate, the agency's Emerging Contaminant's Workgroup was established in 2006. The goal of this effort is to identify and assess public health and environmental problems associated with presently unregulated contaminants, and to recommend agency strategies for managing these contaminants. The Workgroup centralizes MassDEP's focus on emerging contaminants, fosters an intra-departmental information exchange, and brings together a broad range of cross-program expertise. To date, the Workgroup has: (1) defined what constitutes an emerging contaminant; (2) scanned air and water databases to develop a master list of emerging contaminants; (3) established a framework to identify, rank and manage these compounds; and (4) is developing risk management strategies for priority contaminants.

As of early 2007, the agency has developed a preliminary master list of about 100 emerging contaminants, of which a half dozen or so have been identified for further examination in the coming year. Short-term actions underway now include agency participation in a University of Massachusetts study of pharmaceuticals and personal care products in drinking water, and data review assessing the prevalence of certain un-regulated pesticides in drinking water. Longer-term efforts are likely to include nanoparticles and bromated flame retardants in the environment. In addition, MassDEP will be widely informing external stakeholders of the Workgroup's existence in order to convey the agency's proactive efforts to anticipate new environmental and public health problems. MassDEP will also be actively involving experts outside the agency in this work as it moves forward.

## For more information

MassDEP on the Web: <http://mass.gov/dep>  
search keywords: Perchlorate (available now);  
Emerging Contaminants (available late Spring 2007)

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